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Intended for: Supercomputing Challenge Tours and Presentations

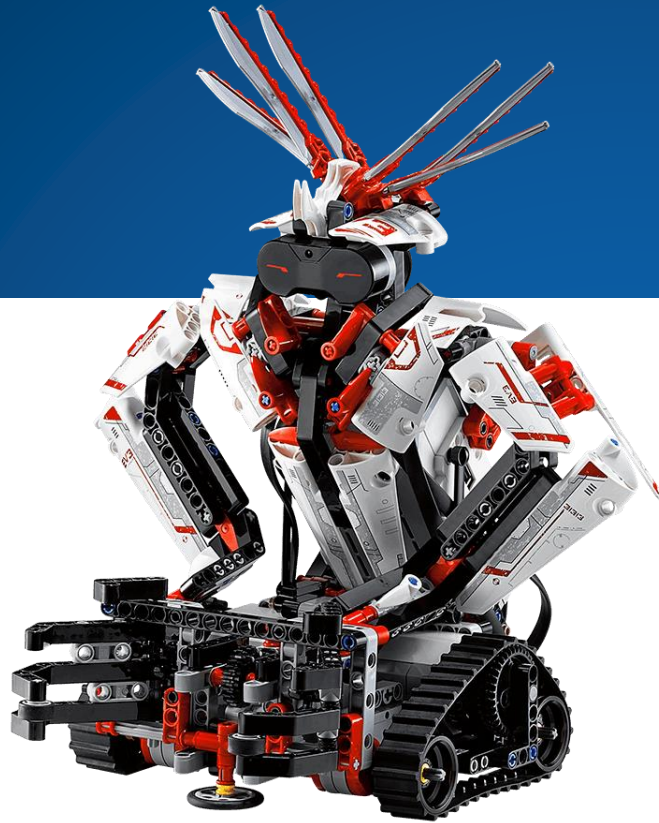
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LANL Robotics



Beth Boardman
Applied Engineering & Technology

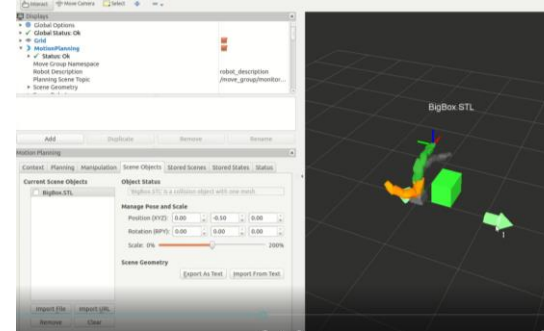
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What is Robotics?

- Automation & Teleoperation
- Hardware & Software
 - Movement using Motors
 - Detection using Sensors
 - Reasoning using Software/Computer



NASA Curiosity Mars Rover



Amazon Prime Air

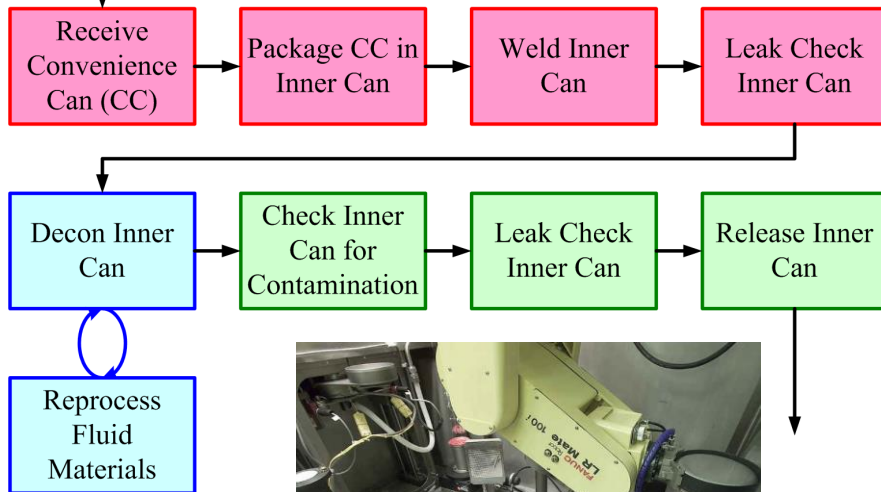


iRobot Roomba

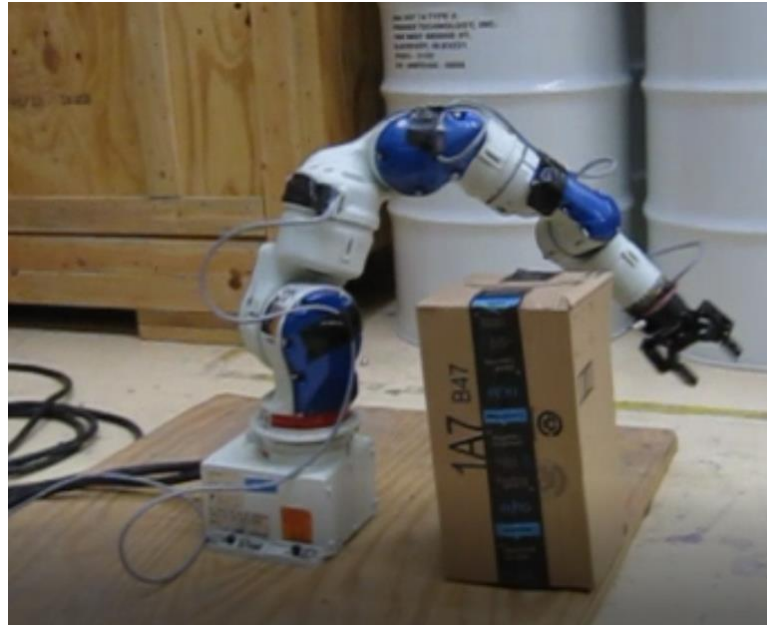


da Vinci Surgical System

Robotics at LANL



5 DOF industrial robot

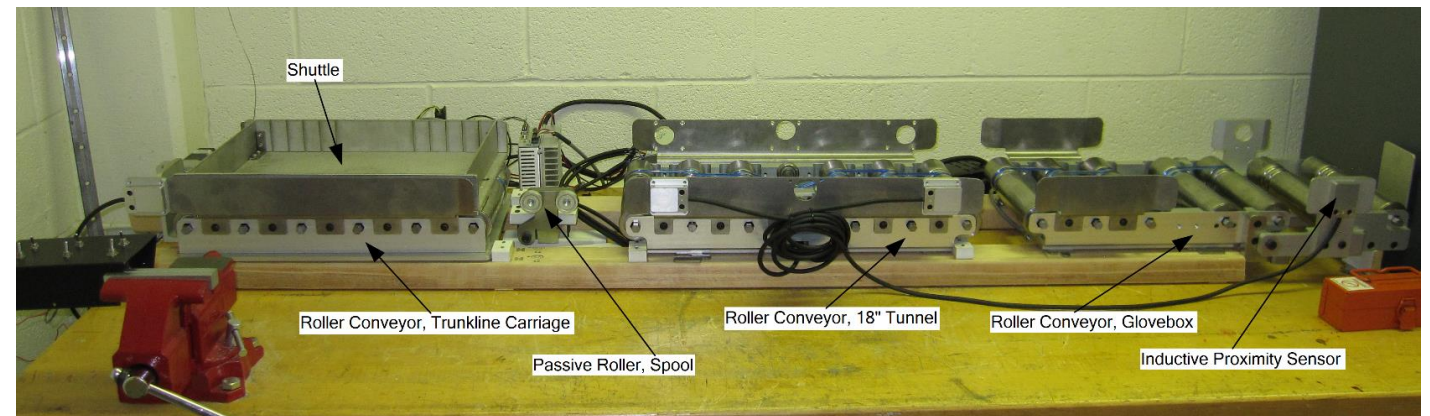
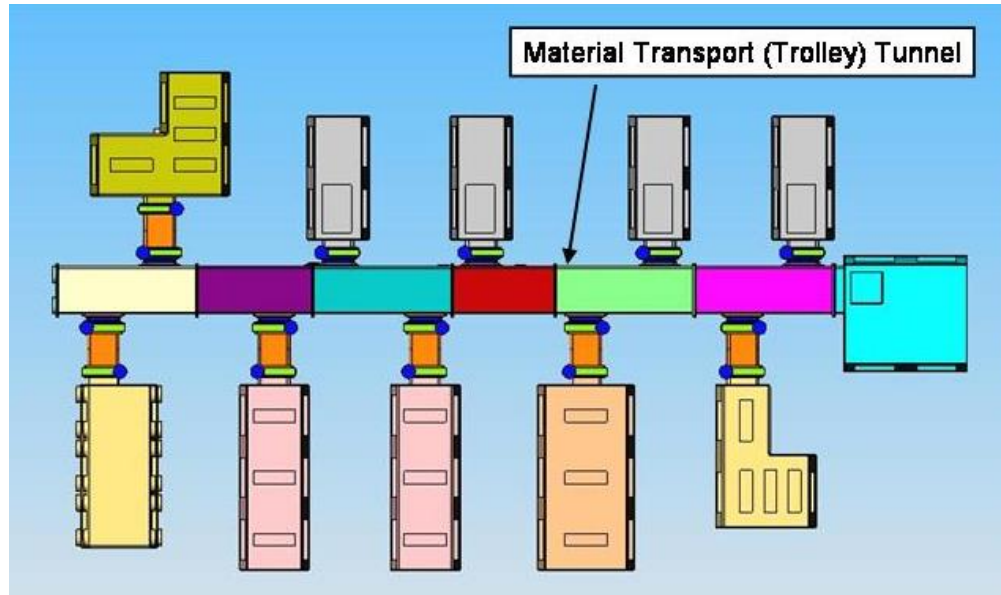


SIA5 7 DOF manipulator demonstrating collision avoidance



3 DOF gantry robot

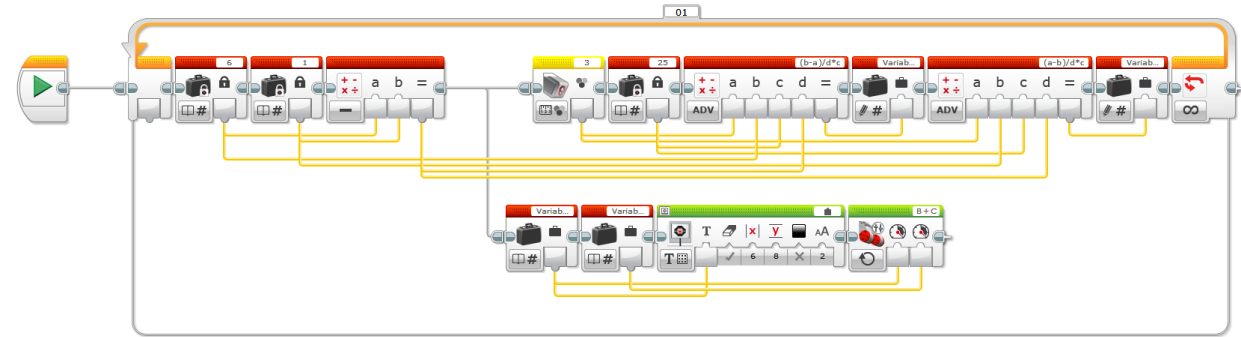
Conveyor System



Lego Mindstorm EV3 – Line Follow

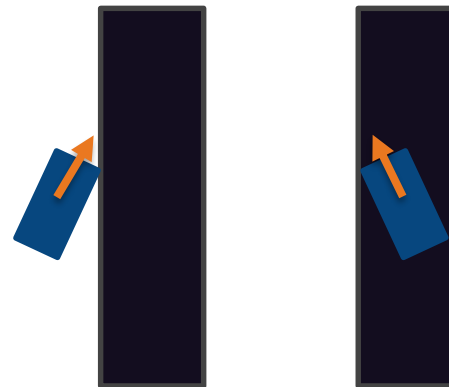
- **Mindstorm**

- Brick, 2 large motors, 1 small motor, color sensor, touch sensor, IR sensor
- Block language



- **Line Follow algorithm**

- Use color sensor
 - if white -> move toward black line (turn right)
 - if black -> move toward white (turn left)



Reference: <https://sites.google.com/site/gask3t/lego-ev3/my-projects/a-better-line-follower>